

Application No.: 10/087,275
Amendment dated: August 25, 2003
Reply to Office Action of: June 11, 2003

MAT-8235US

Amendments to the Specification:

Please replace the paragraph, beginning at page 2, line 15, with the following rewritten paragraph:

An antenna duplexer includes an input terminal, a transmission filter including a surface acoustic wave (SAW) filter having an input port connected to the input terminal, a phase shifter having an input port connected to an output port of the transmission filter, a reception filter having an input port connected to an output port of the phase shifter, an output terminal connected to the output port of the reception filter, and an antenna terminal connected between the transmission filter and the phase shifter. The transmission filter has a power durability at the ~~input terminal~~output port of the transmission filter, being equal to or larger than a power durability at the ~~antenna terminal~~input port of the transmission filter.

Please replace the paragraph, beginning at page 15, line 8, with the following rewritten paragraph:

where N_i is the number of electrode finger pairs of the IDT electrodes before division of the series arm SAW resonators other than the outermost arm SAW resonator, and N_a is the number of finger pairs of each divided SAW ~~filters~~resonator. And the following relation:

Please replace the paragraph, beginning at page 15, line 13, with the following rewritten paragraph:

where L_i is an intersecting width of the IDT electrode before the division of the outermost series arm SAW resonator, and $[[L_i]]L_a$ is an intersecting width of the divided SAW resonator,

Please replace the paragraph, beginning at page 15, line 22, with the following rewritten paragraph:

(2) The ladder structure SAW filter, upon being used as the transmission filter 2, as shown in Fig. 14 and Fig. 15, has the parallel arm SAW resonator closest to the antenna terminal 6 divided in plural resonators. As a result, in a transmission frequency band, the parallel arm SAW resonator accepting a high voltage has a large power durability and hardly deteriorates. The parallel arm SAW resonator closest to the antenna terminal 6, being divided into plural resonators, has the total capacitance of the resonators being nearly the same as the capacitance before the division. Therefore, ~~The~~the parallel arm SAW resonator hardly deteriorates even if accepting a high-frequency voltage being about twice of a usually-accepting voltage. ~~Further, the~~A parallel arm resonator having the smallest capacitance among the parallel arm resonators ~~to~~into which the parallel arm SAW resonator closest to the antenna terminal is divided has a larger capacitance than the ~~other~~other parallel arm SAW resonators other than the divided parallel arm resonator. Therefore, the parallel arm SAW resonator closest to the output port (antenna terminal 6) accepting the largest high-frequency voltage has an enhanced power durability.

Please replace the paragraph beginning at page 16, line 12, with the following:

(3) The ladder structure SAW filter, upon being used as the reception filter 4, has a series arm SAW resonator at the first stage closest to the antenna terminal 6. The resonator is divided in plural resonators, and the series arm SAW resonator of the smallest capacitance among the plural resonators has a larger capacitance

than the other series arm SAW resonators 225 than the divided resonator. As a result, the filter has an enhanced power durability. That is, the following relation is satisfied:

Please replace the paragraph, beginning at page 16, line 22, with the following rewritten paragraph:

Further, the following relation reduces the resistance of the electrode comb tooth and thus reduces generated heat:

$$L_a \leq L_i,$$

where L_i is the intersecting width of the IDT electrode comb tooth of the ~~divided resonator~~ before the division, and L_a is the intersecting width of the tooth of each of the resonators after the division ~~to be L_a , lowers the resistance per the electrode comb tooth and thus reduces generated heat.~~

Please replace the paragraph, beginning at page 17, line 2, with the following rewritten paragraph:

The plural SAW resonators after the division are not required to have ~~identical capacitances or identical intersecting widths~~ identical to each other.

Please replace the paragraph beginning at page 17, line 4, with the following:

(4) The ladder structure SAW filter, upon being used as the reception filter 4, as shown in Fig. 21 and Fig. 22, the parallel arm SAW resonator closest to the antenna terminal 6 is divided into plural resonators. As a result, the filter has an enhanced power durability and hardly deteriorates. If the total capacitance of the resonators after the division is nearly the same as the capacitance of the divided

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resonator, ~~The~~the parallel arm SAW resonator hardly deteriorates even if accepting a high-frequency voltage about twice larger than a usually-accepted voltage. Further, the parallel arm resonator having the smallest capacitance among the plural resonators has a larger capacity than the parallel arm SAW resonator 227 which is not divided. This enhances the power durability of the filter.